



1            Scope:

This specification establishes the requirements for the redrawing, inspection, identification and delivery of SSC NbTi superconductor Corrector wire for the helical dipole magnets. Brookhaven National Laboratory (BNL) will supply 0.015" and 0.017" diameter wire taken from SSC surplus inventory. This has to be drawn to 0.0130" and meet the requirements as specified herein.

2            Requirements:

2.1          Wire Diameter:

The wire supplied has to be drawn to a final diameter of  $0.0130 \pm 0.0002$  in. The tolerance on the wire diameter is a maximum limit and does not include averaging or statistical weighing. The tolerance must be held for the wire measured across any diameter/axis. Verification of this diameter shall be determined by the vendor using an appropriately calibrated dual-axis laser micrometer used to check all of the wire produced after all fabrication steps are complete. The laser micrometer should be capable of detecting local variations in the wire diameter over a length of one-inch.

Statistical analysis of on-line laser micrometer measurements made every 100 feet shall be provided by the vendor to BNL.

2.2          Wire Breakage During Processing:

BNL will agree to limit wire breakage during wire drawing to one break per spool.

If a second break occurs, the processing of that spool may stop and the balance of the unprocessed wire be returned to BNL. If in the opinion of the vendor the breakage is not the fault of the wire, then processing of that spool should continue.

2.3          Wire Surface Condition:

The wire surface shall be free of all surface defects, slivers, folds, laminations, dirt, or inclusions. No NbTi filaments shall be visible through the copper. These conditions must be met for any sample of the wire inspected using a magnification of 10x. Wire surface has to be free of lubricating oil used in the draw process.

2.4          Wire Samples:

Ten ft.-long wire samples will be taken from every wire spool and sent to BNL. Envelopes and labels for the wire samples will be provided by BNL.

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3 Preparation for Delivery:

3.1 The wire shall be spooled on a non-metallic spool with a core of a minimum three inches diameter. Each spool shall contain only one continuous length of wire. Wire shall be level-wound so it can be unspooled without crossovers or kinks. The completed spool shall be overwrapped with a cotton tape, or substantially equal non-metallic material, which will prevent damage to the wire while preventing the unwinding of the wire.

3.2 Marking/Requirements:

Spools and exterior packaging shall be identified on both flanges with the following information in the order shown:

"Redraw of SSC Corrector Superconductor Wire for RHIC Helical Dipole Magnets"	
Specification No. RHIC-MAG-R-8001, Rev. A	
BNL P.O. No.	_____
Wire Spool No.	_____
Length _____	Feet _____
Weight _____	Pounds _____
Date of Manufacture	_____
SSC Spool No.	_____

3.3 Wire Identification Numbers:

The system for wire identification will be given to the vendor by BNL.

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4 Quality Assurance Provisions:

The vendor shall maintain a quality assurance program to insure that each item offered for acceptance or approval conforms to the requirements herein.

4.1 Requirements of BNL-QA-101:

4.1.1 The vendor shall accomplish the following requirements of BNL-QA-101, Brookhaven National Laboratory Seller Quality Assurance Requirements:

Paragraph in BNL-QA-101

3.1.2 MIL-I-45208 system specified

4.3

4.7

4.9

4.10 including 4.10.1, 4.10.3, 4.10.4, 4.10.5